IF YOU WIN (OR NOT)

Keep in mind that scientific discovery is the goal, not just winning a competition! By doing this project, you have successfully integrated science with math, writing, deductive reasoning, persuasion and presentation skills. With that integration of many diverse skills and abilities, you have learned what it takes to approach most of life's events, including graduating high school, choosing a college, pursuing lifelong hobbies, choosing an area of degree or specialty, working as a team, getting along with others, and making a professional presentation!

So start thinking now about that project for next year!!!!!

And don't be afraid to reach for:

A NOTE TO TEACHERS & FAIR ORGANIZERS:

Don't start out your science fair in a discouraging way! Middle school and first year participants especially may need some direction and help, or they may never attempt a project again. And make sure you leave time for the parents and public to view the fair, offering their own kind of encouragement to all!

A NOTE TO PARENTS:

Your child has just possibly put in the most work of their school career!! Go see their project and note something encouraging and positive about their efforts.

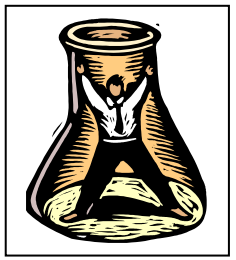
THE CRITICAL FACTOR

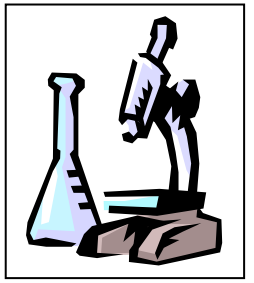
It is essential to encourage an interest in science, technology and math, starting and during the middle school years, especially among the girls. It is at this age that subtle, not quite hidden messages are given out that tell students they cannot hope to do well in these subjects, often discouraging them for the rest of their school years.

This brochure is from the Ultra-Efficient Engine Technology Project at NASA John H. Glenn Research Center

SCIENCE FAIRS RULE!!!

YOUR PROJECT CAN TOO!!!





Tips for Your Project, Including:

- *How to Pick A Topic & Determine A Research Question*
- *What the Scientific Method Is*
- *What Judges Look For*
- *Resources, Including the Internet*
- *If You Win (Or Not)*
- *A Note to Teachers*

Why A Science Fair Project:

Nothing else is like a science fair! When you do a science fair project you combine all of the subjects you are studying to discover little known or unknown information about a subject of **your** choosing…and the best projects are curiosity driven by subjects you are interested in! The independent achievement in a good project can prepare you to live a productive and responsible life in a world increasingly shaped by science and technology. And science fair honors rank high among the screening factors used by admissions officers at most universities.

PICKING A TOPIC

Start with a question on something that interests you—but remember, it's the test you do that counts, not just showing you know the facts about something. So look at the resources from the Internet, checkout your school's past science fairs, read science magazines, and do research at your local library. And don't forget to ask your science teacher!

THE RESEARCH QUESTION

The right research question makes the best use of the scientific method. It is a question you can perform a test on, or design an experiment around, display and chart its results, and write a report and abstract. The research question is often the form of a prediction of what should happen if you have managed to work out the effect of the variables you are studying.

THE SCIENTIFIC METHOD

This is the process to do your research and test your question. Form a question or problem, and devise a test or experiment that will answer the question. Identify different variables that could prove your question (hypothesis) and do the test more than once. Gather and analyze the results, and come to a conclusion.

WHAT JUDGES LOOK FOR

Judges look at you, your display, your report and how well you do your presentation. You are part of your display, remember you are representing your school as well as your project—be polite. Answer all the judges and the public's questions as if it was your teacher asking them. Your display should have something catchy on it to attract the eye of the casual visitor and also show the judges your creativity. It is also helpful to have charts proving and disproving your hypothesis as part of your display. And your display should be able to explain your project without you being there.

Some specific things judges look for include photographs and graphs, display models, and copies of your abstract available to hand out. Try not to leave large empty spaces on your poster, or hand print letters on the backboard —you can use computer-generated words or buy letters at an office supply or hardware store. Don't attach folders that fall open on your backboard, and use a spell-checker so you don't make mistakes in spelling. All these details will make your project look professional.

RESOURCES

Resources on the Internet are in a constant state of change, therefore it is always a good idea to do a search using more than one search engine. Some common ones are Google.com, Altavista.com, or Ask Jeeves.com. And don't forget to acknowledge the people who are resources for your project, including parents and experts in the field.

And remember, whenever you are on the Internet, never, ever provide personal details about yourself, or your school, or where you live. Have information mailed to your teacher at school, if necessary. There are people who gather information from the Internet or emails and use that information to do harm. So always use caution, and if you are not sure ask an adult!

FINAL DETAILS

Your project should show that you sought to answer a question, and that the answer was not previously known to you. The scientific methodology should be obvious, rather than only descriptions and observations. You should define goals and objectives of the project clearly. Scientific literature should be used as appropriate.

Data collected should relate to the hypothesis, and it should be clear if the data supports or fails to support your theories. The variables need to be clearly defined, and identify any technical problems that were overcome.